

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/050504

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C01B3/38 B01J8/06 B01J8/00 B01J8/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C01B B01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, COMPENDEX, API Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|----------|--|-----------------------|
| X | US 4 650 651 A (FUDERER ANDRIJA) 17 March 1987 (1987-03-17) column 5, line 52 - column 6, line 51; figure | 1-4 |
| X | NL 8 403 144 A (STAMICARBON) 16 May 1986 (1986-05-16) page 4, line 3 - page 5, line 4; figure 1 | 1-4 |
| X | WO 01/55027 A (FARNELL PETER WILLIAM ; ICI PLC (GB)) 2 August 2001 (2001-08-02) page 3, line 6 - page 4, line 35; figure | 1-4 |
| X | GB 1 093 943 A (ICI LTD) 6 December 1967 (1967-12-06) page 3, line 10 - line 50; figure | 1-4 |
| | | -/- |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the International search

13 August 2004

Date of mailing of the International search report

20/08/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Van der Poel, W

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/050504

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|---|--|------------------------------|
| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | EP 0 440 258 A (TOPSOE HALDOR AS) 7 August 1991 (1991-08-07) figure 1 ----- | 1 |
| A | US 2002/006970 A1 (WANG YONG ET AL) 17 January 2002 (2002-01-17) claims 1-6 ----- | 1,2 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/050504

| Patent document cited in search report | Publication date | Patent family member(s) | | Publication date |
|--|------------------|-------------------------|--|------------------|
| US 4650651 | A 17-03-1987 | CA 1285899 C | | 09-07-1991 |
| | | CN 87100591 A | | 20-07-1988 |
| | | GB 2199841 A , B | | 20-07-1988 |
| | | IN 167731 A1 | | 15-12-1990 |
| | | US 4822521 A | | 18-04-1989 |
| NL 8403144 | A 16-05-1986 | NONE | | |
| WO 0155027 | A 02-08-2001 | AU 2530701 A | | 07-08-2001 |
| | | EP 1252090 A1 | | 30-10-2002 |
| | | WO 0155027 A1 | | 02-08-2001 |
| | | JP 2003520747 T | | 08-07-2003 |
| GB 1093943 | A 06-12-1967 | NONE | | |
| EP 0440258 | A 07-08-1991 | DK 28390 A | | 03-08-1991 |
| | | AT 113260 T | | 15-11-1994 |
| | | AU 624759 B2 | | 18-06-1992 |
| | | AU 7017391 A | | 08-08-1991 |
| | | CA 2035331 A1 | | 03-08-1991 |
| | | CN 1056850 A , B | | 11-12-1991 |
| | | CS 9100248 A2 | | 13-08-1991 |
| | | DE 69104735 D1 | | 01-12-1994 |
| | | EP 0440258 A2 | | 07-08-1991 |
| | | ES 2065556 T3 | | 16-02-1995 |
| | | JP 1954871 C | | 28-07-1995 |
| | | JP 4215837 A | | 06-08-1992 |
| | | JP 6075670 B | | 28-09-1994 |
| | | SK 279079 B6 | | 03-06-1998 |
| | | RU 2053957 C1 | | 10-02-1996 |
| | | US 5167933 A | | 01-12-1992 |
| | | ZA 9101771 A | | 27-11-1991 |
| US 2002006970 | A1 17-01-2002 | US 6284217 B1 | | 04-09-2001 |
| | | US 2003017105 A1 | | 23-01-2003 |
| | | AU 6643400 A | | 13-03-2001 |
| | | CA 2380869 A1 | | 22-02-2001 |
| | | EP 1204587 A1 | | 15-05-2002 |
| | | JP 2003507291 T | | 25-02-2003 |
| | | NO 20020419 A | | 09-04-2002 |
| | | WO 0112540 A1 | | 22-02-2001 |
| | | US 2003185750 A1 | | 02-10-2003 |
| | | US 2001032965 A1 | | 25-10-2001 |